

NORTH PACIFIC OCEAN

By WILLIS E. HURD

Atmospheric pressure.—An inspection of Table 1 shows that the coastal section of the United States had practically normal atmospheric pressure for October, 1931, while the entire Aleutian region and Alaskan waters had pressure considerably below the normal for the month. It was here also somewhat lower than the normal even for midwinter. A decided downward trend of the barometer in northern waters began about the 10th, and thereafter until the end of the month a succession of deep lows crossed the upper steamship routes, the Bering Sea, and the Gulf of Alaska. The average center of the Aleutian low in October lay in the neighborhood of Kodiak, where the pressure for the month was 29.41 inches.

The North Pacific high lay as usual off the California coast fluctuating somewhat, as lows pressed upon or penetrated into it, but maintaining its existence fairly intact throughout the month.

In Asiatic waters a succession of lows and typhoons rendered pressure conditions as usual very unstable.

The following table gives barometric data for several island and coast stations in west longitudes, including Point Barrow on the Arctic Ocean:

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean and adjacent waters, October, 1931, at selected stations

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Point Barrow ¹	29.80	-0.13	30.30	27th ⁴	29.34	17th.
Dutch Harbor ¹	29.57	-0.08	30.18	1st ⁴	28.52	16th.
St. Paul ¹	29.51	-0.12	30.14	18th	28.58	13th.
Kodiak ¹	29.41	-0.18	29.94	5th	28.60	21st.
Midway Island ¹	30.08	+0.05	30.22	18th	29.88	5th.
Honolulu ²	29.99	-0.01	30.09	20th	29.84	10th.
Juneau ³	29.75	-0.12	30.49	6th	28.90	31st.
Tatoosh Island ¹	30.01	0.00	30.44	7th	29.14	21st.
San Francisco ⁴	30.02	+0.01	30.26	26th	29.66	18th.
San Diego ⁵	29.96	+0.01	30.09	15th	29.73	18th.

¹ P. m. observations in averages; a. m. and p. m. in extremes.

² For 29 days.

³ For 30 days.

⁴ And on other dates.

⁵ A. m. and p. m. observations.

⁶ Corrected to 24-hour mean.

Cyclones and gales.—Storminess on the North Pacific did not assume severe proportions as a rule until after the 10th of October. Prior to that date two typhoons originated in the Far East, and moderate cyclonic conditions prevailed over the northern waters, causing gales of force 8 to 9 over scattered areas from the central Aleutians eastward.

On the 11th the Aleutian cyclone spread out and deepened, with the result that local gales of force as high as 10 occurred near the Peninsula of Alaska, and of lesser force over a considerable surrounding region. On the 15th the most vigorous extratropical cyclone of the month lay over and to the southward of the western Aleutians. Since a typhoon was moving rapidly eastward from a position southeast of the Kuril Islands on the 14th its influence was in all probability a great factor in increasing the energy of the Aleutian cyclone central west of the one hundred and eightieth meridian, between 40° and 50° latitude, on the 15th. On this date the maximum reported strength of the gales had risen to force 11 near 47° N., 175° E., and pressure had fallen below 28.50 inches south

of Atka, Aleutian Islands. On the 16th a radio report from the American steamship *Grays Harbor*, near 50° N., 175° W., indicated that the vessel was experiencing a northwest wind of hurricane velocity. The storm moved northeastward with diminishing intensity and by the 19th had largely entered the continent through Alaska.

This cyclone was quickly succeeded by another Aleutian storm which moved into south Alaskan waters and there remained from the 20th to 24th, with central pressures below 28.50 inches on the first two days and moderate to whole gales blowing north of the fiftieth parallel. Thenceforth to the end of October pulsations of the Aleutian low covered the Gulf of Alaska, accompanied by scattered gales of moderate to strong force, that were experienced from the 27th to 31st as far south as the fortieth parallel.

Moderate to fresh gales were reported off the central California coast on the 8th and 17th, associated with the activities at the rear of lows then central over Nevada. Another California coast gale was that of the 21st, on which date the Gulf of Alaska low extended almost to the latitude of San Francisco.

Over the western part of the North Pacific Ocean, between the Asiatic coast and 160° east longitude, such stormy weather as prevailed resulted from the continental cyclones that went seaward from northern Japan and Siberia, and from such tropical depressions and typhoons as occurred.

From the few reports of our marine observers, in lower Asiatic waters, in conjunction with the Tokyo Weather maps, the tracks of four October typhoons can be plotted. All originated in low latitudes between the Caroline and Philippine Islands, and two moved westward over or near Luzon into the China Sea. These two were the typhoons of October 6 to 11 and October 15 to 20. Little is known at this writing as to the actual violence of these storms, except that the earlier developed hurricane force on the 10th some 300 to 350 miles south of Hong Kong, as shown in the report of the British tanker *Achilles*. This vessel also during a period of five minutes beginning at 8.30 a. m., passed through the typhoon's region of central calm.

The two other typhoons, one of the 6th to 14th, and the other of the 20th to 27th, passed well into middle latitudes. The earlier recurved near 22° N., 127° E., crossed the Nansei Islands on the 12th and central Japan on the 13th, and with increased velocity of progression went seaward where it seems to have become a part of the prevalent Aleutian low. Thirty lives were reported lost in Japan as this storm passed. Fresh to strong gales attended its passage over the ocean on the 14th, after leaving Japan. The other typhoon did not go so far to the westward. It recurved toward northeast on the 24th near the twentieth parallel, near 133° east longitude, crossed the Ogasawara Islands on the 25th, and was last identified on the 27th near 42° N., 155° E.

No tropical cyclones occurred in Mexican west coast waters this month. And no northers of moment occurred in the Gulf of Tehuantepec until the 31st, when a moderate northwest gale was experienced there during the southward movement of a strong anticyclone over the United States.

Winds at Honolulu.—The prevailing wind direction at Honolulu was from the east, and the maximum velocity was 24 miles an hour from the northeast on the 21st.

Fog.—The production of fog lessened materially along the trans-Pacific routes, and thick weather from this source was of little moment even in northern waters.

Fog was general, however, for some distance east of the Kuril Islands on the 1st to 4th. It was only along the American coast that fog formed readily and frequently this month. Here between North Head and Point Arguello it formed on at least 12 to 15 days of the month. Off the west coast of Lower California it was reported on 7 days.

First nonstop flight across the Pacific.—On October 3 at 5.01 p. m. (E. S. T.) Clyde Pangborn and Hugh Herndon, American flyers, took off in a plane from Samoshiro Beach, near Tokyo, Japan, and landed at Wenatchee, Wash., at 10.14 a. m. (E. S. T.) on October 5, after a flight of 41 hours and 13 minutes, covering a distance of 4,877 miles.

The start was made under good weather conditions, with an anticyclone overlying Japan on the 3d. South-east of the Kuril Islands, on the 3d and 4th, some fog seems to have been the only hazard confronting the early part of the trip. The Aleutian Low was comparatively shallow and not stormy, but rather, seems to have given favoring winds over much of the north-central part of the ocean. Fine anticyclonic weather prevailed for a long distance westward from the American coast on the 5th. The weather hardly could have been more favorable for such a trip in October.

BUCKET OBSERVATIONS OF SEA-SURFACE TEMPERATURES

By GILES SLOCUM

STRAITS OF FLORIDA AND CARIBBEAN SEA

Table 1 shows the average temperatures for the Caribbean Sea and the Straits of Florida for October of each year from 1919 to 1930, inclusive, and Table 2 summarizes the temperatures for October, 1930, in the same areas. The chart shows the number of observations taken in October, 1930, within each 1-degree square and mean temperature data for subdivisions of the area considered.

The surface waters of the Caribbean average nearly as warm in October as in the warmest month of the year, September. From a mean temperature at, or near, the yearly maximum, the water cools at a rate somewhat more pronounced than is the rise in its temperature during September, but still at so slow a rate that, throughout the month, the sea retains the high surface temperature characteristic of the summer season.

Autumn conditions, however, are in evidence in the region of the Florida Straits. The temperature drops with comparative rapidity, usually approaching, by the end of October, the yearly mean for the area, while throughout the month the straits are cooler than the Caribbean, a winter characteristic.

October, 1930, was cooler than the 11-year October mean in the straits, and warmer than the mean in the Caribbean for the eighth consecutive month of 1930, with all four quarters of the month warmer than the 11-year mean for either September or October.

TABLE 1.—Mean sea-surface temperatures in the Caribbean Sea and the straits of Florida for October, 1919–1930

Year	Caribbean Sea		Straits of Florida	
	Number of observations	Mean (° F.)	Number of observations	Mean (° F.)
1919 ¹	92	82.2	29	81.8
1920	132	82.0	39	79.9
1921	252	82.1	74	82.0
1922	248	82.4	90	81.6
1923	290	81.6	106	81.1
1924	286	82.6	112	80.6
1925	389	82.5	121	82.8
1926	453	83.0	180	82.0
1927	558	83.4	179	81.8
1928	550	82.6	160	82.3
1929	623	82.5	201	80.1
1930	627	82.9	177	81.2
Mean (1920–1930)		82.5		81.4

¹ Not used in computations because of insufficient data available.

TABLE 2.—Mean sea-surface temperatures (° F.), and number of observations, October, 1930

Quarter	Period	Caribbean Sea				Straits of Florida			
		Number of observations	Mean	Departure from 11-year mean (1920–1930)	Change from preceding month	Number of observations	Mean	Departure from 11-year mean (1920–1930)	Change from preceding month
I	Oct. 1–7	152	°F. 82.8	°F.	°F.	41	°F. 82.2	°F.	°F.
II	Oct. 8–15	172	82.8			43	81.5		
III	Oct. 16–23	148	83.1			49	81.3		
IV	Oct. 24–31	155	82.8			44	79.6		
Month		627	82.9	+0.4	–0.1	177	81.2	–0.2	–2.3